

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims:

1. (previously presented) A method of aggregating web services in generating a user interface for a computing device, the method comprising:

receiving at least one web service description, wherein said at least one web service description comprises a plurality of web service description elements that define a web service interface to each of a plurality of web services;

processing said at least one web service description to identify inputs to and outputs from associated web services;

generating one or more user interfaces through which input data is obtainable and output data is displayable;

providing said one or more user interfaces, wherein in use, at least a subset of said plurality of web services is invoked using input data obtained through said one or more user interfaces, and wherein output data is displayed through said one or more user interfaces from said at least a subset of said plurality of web services;

monitoring said input data obtained and said output data displayed during use of said one or more user interfaces to identify patterns in said input data and said output data that suggest that an input to a first web service of said plurality of web services is obtainable from output of a second web service of said plurality of web services; and

generating a new user interface for said computing device if said patterns are identified, wherein in use, the first web service is automatically invoked using output data from the second web service when the second web service is invoked through said new user interface.

2. (previously presented) The method of claim 1, wherein said new user interface is adapted to display output data from said first web service.
3. (previously presented) The method of claim 1, further comprising generating code for said user interface, and storing said code in a storage device.
4. (currently amended) The method of claim 3, further comprising ~~the step of~~ transmitting said code from said storage device to said computing device.
5. (original) The method of claim 3, further comprising executing said code on said computing device.
6. (previously presented) The method of claim 1, wherein said new user interface is adapted to prompt for input data and receive said input data in said new user interface for invoking said second web service.

Claims 7-10: (cancelled).

11. (previously presented) The method of claim 1, wherein said patterns are identified by detecting instances where said input data obtained through said one or more user interfaces matches output data displayed through said one or more user interfaces.
12. (previously presented) The method of claim 1, wherein said patterns are identified by detecting instances in which selected data from output data displayed to said at least one user through said one or more user interfaces is copied to an input field on said one or more user interfaces, in which data in said input field is used to invoke a web service.

Claims 13-14: (cancelled).

15. (previously presented) An apparatus programmed to perform a method of aggregating web services in generating a user interface for a physical computing device, comprising a microprocessor configured to perform acts comprising:

receiving at least one web service description, wherein said at least one web service description comprises a plurality of web service description elements that define a web service interface to each of a plurality of web services;

processing said at least one web service description to identify inputs to and outputs from associated web services;

generating one or more user interfaces through which input data is obtainable and output data is displayable;

providing said one or more user interfaces, wherein in use, at least a subset of said plurality of web services is invoked using input data obtained through said one or more user interfaces, and wherein output data is displayed through said one or more user interfaces from said at least a subset of said plurality of web services;

monitoring said input data obtained and said output data displayed during use of said one or more user interfaces to identify patterns in said input data and said output data that suggest that an input to a first web service of said plurality of web services is obtainable from output of a second web service of said plurality of web services; and

generating a new user interface for said computing device if said patterns are identified, wherein in use, the first web service is automatically invoked using output data from the second web service when the second web service is invoked through said new user interface.

16. (original) The apparatus of claim 15, wherein the apparatus is a mobile device.

17. (previously presented) A physical computer-readable medium upon which a set of software components is stored, the software components containing instructions for performing the steps in a method of aggregating web services in generating a user interface for a computing device, the instructions for:

receiving at least one web service description, wherein said at least one web service description comprises a plurality of web service description elements that define a web service interface to each of a plurality of web services;

processing said at least one web service description to identify inputs to and outputs from associated web services;

generating one or more user interfaces through which input data is obtainable and output data is displayable;

providing said one or more user interfaces, wherein in use, at least a subset of said plurality of web services is invoked using input data obtained through said one or more user interfaces, and wherein output data is displayed through said one or more user interfaces from said at least a subset of said plurality of web services;

monitoring said input data obtained and said output data displayed during use of said one or more user interfaces to identify patterns in said input data and said output data that suggest that an input to a first web service of said plurality of web services is obtainable from output of a second web service of said plurality of web services; and

generating a new user interface for said computing device if said patterns are identified, wherein in use, the first web service is automatically invoked using output data from the second web service when the second web service is invoked through said new user interface.

18. (new) The apparatus of claim 15, wherein said new user interface is adapted to display output data from said first web service.

19. (new) The apparatus of claim 15, said acts further comprising generating code for said user interface, and storing said code in a storage device.

20. (new) The apparatus of claim 19, said acts further comprising transmitting said code from said storage device to said computing device.

21. (new) The apparatus of claim 19, said acts further comprising executing said code on said computing device.

22. (new) The apparatus of claim 15, wherein said new user interface is adapted to prompt for input data and receive said input data in said new user interface for invoking said second web service.

23. (new) The apparatus of claim 15, wherein said patterns are identified by detecting instances where said input data obtained through said one or more user interfaces matches output data displayed through said one or more user interfaces.

24. (new) The apparatus of claim 15, wherein said patterns are identified by detecting instances in which selected data from output data displayed to said at least one user through said one or more user interfaces is copied to an input field on said one or more user interfaces, in which data in said input field is used to invoke a web service.